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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,456	12/06/2000	Kenneth L. Levy	P0249	1278

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EXAMINER	
POLTORAK, PIOTR	

ART UNIT	PAPER NUMBER
2134	

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/731,456	LEVY ET AL.	
	Examiner	Art Unit	
	Peter Poltorak	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/06/2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 have been examined.

Priority

2. Priority has been made in this application.

3. The effective filing date for the subject matter defined in the pending claims in this application is 09/11/2000.

Oath/Declaration

4. The Declaration does not contain the title of the invention nor does it identify the residence or postal address of each inventor. The residence information may be provided on either an application data sheet or a supplemental oath or declaration.

Information Disclosure Statement

5. An IDS has been recorded as having been received on 4/28/2002 but is not currently included with the file.

Drawings

6. The drawings are objected to because the object 110 of Fig. 1 has not been addressed within the specifications. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from

the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

7. Claims 7-9 and 17 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 101

8. Claim 1 provides authenticating a media signal, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Claims 1-9 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper

definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 9 recites the limitation "The detector" in line 1. There is insufficient antecedent basis for this limitation in the claim. It has been treated as though it depends from claim 8.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-2, 4 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by *Katzenbeisser et al. (Stefan Katzenbeisser and Fabien A.P. Petitcolas,*

"Information hiding techniques for steganography and digital watermarking", ISBN: 1580530354).

12. *Katzenbeisser et al.* teach transforming at least a portion of an image signal into a set of frequency coefficients *(Stefan, discrete cosine transformation [DCT] pg. 56-59)* and adjusting a relationship between selected frequency coefficients *("two DCT coefficients", pg. 59)* to a reference value such that an alteration to the media signal to be detected alters the relationship *(pg. 59)*.

13. *Katzenbeisser et al.* teach the relationship as comprising a ratio between a selected coefficient and one or more neighboring coefficients *(pg.60 algorithm 3.9)*.

14. **Claims 10,14 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by *Bruckstein et al. (U.S. Patent No. 6757407).***

15. *Bruckstein et al.* teach a method of authenticating an image *(abstract)* signal comprising evaluating signal peaks at selected frequency coefficients of the media signal, where the media signal has been previously modified to include peaks at the selected frequencies, and determining based on degradation of the signal peaks whether the media signal has been altered. *(Bruckstein et al. Fig. 5-7, col. 9 lines 49-67, col. 10 lines 1-67 and col. 11 lines 1-7).*

16. *Bruckstein et al.* do not explicitly teach evaluating signal peaks at selected frequency coefficients of the media signal, where the media signal has been previously modified to include peaks at the selected frequencies but this feature is inherent as *Bruckstein et al.* evaluates the media signal with no discrimination and thus authentication process would include evaluating signal peaks.

17. **Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by *Daly et al. (U.S. Patent No. 5859920).***

Daly et al. teach a decoding a watermark from a media signal using a calibration signal to determine orientation parameters. The calibration signal includes a set of peaks at selected frequency coefficients, *(col. 9 lines 43-45, col. 10 lines 39-60, col. 11 and col. 12 lines 1-45, figures 15-21 and 4-6).*

18. *Daly et al's.* teaching is applied to printed images *(col. 9 lines 14-16).*

19. *Daly et al.* do not explicitly teach evaluating whether the media signal has been altered after the embedding by examining signal peaks at selected frequency coefficients in the media signal; however, this feature in inherent as in their teaching because *Daly et al.* employ approaches that may approximate the results that would be obtained from "perfect fit" image detection *(col.9 lines 40-50).*

20. *Daly et al.* do not explicitly say that the detector and analyzer use at least some of the same frequency coefficients for determining orientation and for evaluating whether the media signal has been altered; however these features are inherent since the analyzer is employed only after the area of interest is found, and in both cases the same target image is a goal of the search/analysis. Furthermore, the analyzer uses at least some of the same frequency coefficients that were selected for it by the detector.

21. *Daly et al.* anticipate analyzing to detect reproduction of a printed image in lines 8-24 col. 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

22. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Katzenbeisser et al.* in view of *Wolfgang et al. (U.S. Patent No. 6625295).***

23. *Katzenbeisser et al.* teach method of authenticating a media signal.

24. *Katzenbeisser et al.* do not teach the alteration to be detected is scanning, printing or photocopying the image signal.

25. *Wolfgang et al.* teach that information such as copyrighted image for which protection is sought could be placed onto computer system through scanning *(Wolfgang et al., pg. 5 lines 48-61)*. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to detect scanning of images via *Katzenbeisser et al.'s* invention to help protect copyrights.

26. **Claim 5 is rejected under 35 U.S.C. 103(a) as being rendered obvious by *Katzenbeisser et al.* in view of *Ribas-Corbera (U.S. Patent No. 6535251).***

27. *Katzenbeisser et al.* teach method of authenticating a media signal.

28. *Katzenbeisser et al.* do not teach that the relationship comprises a ratio between the magnitude of a selected coefficient and an average of neighboring coefficients.

29. *Ribas-Corbera* teaches utilization of average value in order to improves video quality *(Ribas-Corbera pg. 6 lines 31-42)*. Therefore it would have been obvious to person

of ordinary skill in the art at the time the invention was made to use an average of neighboring coefficients while operating on selected coefficients. This would minimize the risk of errors by increasing the fidelity of image quality.

30. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Katzenbeisser et al.* in view of *Rhoads et al. (U.S. Patent No. 5832119).***

31. *Katzenbeisser et al.* do not teach the method including embedding a calibration signal into the media signal to enable a detector to compensate for changes in scale or translation of the media signal after being adjusted according to the relationship.

32. *Rhoads et al.* teach calibration signal embedded within media signal to enable a detector to compensate for changes in scale or translation of the media signal after being adjusted *(Rhoads et al. col. 2 lines 11-22)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement *Rhoads et al.* teaching within *Katzenbeisser et al.'s* invention. One of ordinary skill in the art would have been motivated to perform such a modification in order to *recover the information signal from the corrupted signal.*

33. **Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Katzenbeisser et al.* in view of *Echizen et al. (U.S. Patent No. 6563935).***

34. *Katzenbeisser et al.* teach authenticating an image signal. *Katzenbeisser et al.* do not teach computing the relationship in a potentially corrupted version of the media signal and comparing the relationship with a threshold to detect alteration of the potentially corrupted media signal.

35. *Echizen et al.* teach computing the relationship between obtained results and thresholds *(Echizen et al., col. 10 lines 28-60).* It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize *Echizen et al.'s* teaching in *Katzenbeisser et al.'s* invention in order to avoid false negatives and recover from minor errors due to the transmission.

36. **Claim 11 is rejected under 35 U.S.C. 103(a) as being anticipated by *Bruckstein et al. (U.S. Patent No. 6757407)* in view of *Rhoads et al. (U.S. Patent No. 5832119).***

37. *Bruckstein et al.* teach authenticating an image signal. *Bruckstein et al.* do not teach using one or more peaks to re-orient the media signal.

38. *Stallings* teaches that noise alters a signal by changing the position of some of the peaks *(Stallings, pg. 60 Fig. 2.15).* It would have been obvious to one having ordinary skill in the art at the time the invention was made to re-orient the media signal to one or more peaks in order to find the most accurate point of reference for authenticating the image signal.

39. **Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bruckstein et al. (U.S. Patent No. 6757407)* in view of *Echizen et al. (U.S. Patent No. 6563935).***

40. *Bruckstein et al.* teach authenticating an image signal. *Bruckstein et al.* do not teach correlating the media signal with a calibration signal to determine translation and scale of the media signal.

41. *Echizen et al.* teach correlating the media signal to determine translation and scale of the media signal *(Echizen et al., pg. 2 col. 26-32 and pg. 10. lines 28-60).* It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement *Echizen et al.'s* technique in *Brucksein et al's* invention in order to authenticate a media signal which are effected by translation and scale of the media signal.

42. **Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bruckstein et al. (U.S. Patent No. 6757407)* in view of *Echizen et al. (U.S. Patent No. 6563935)* and in further view of *Rhoads (U.S. Patent No. 5636292).***

43. *Bruckstein et al.* and *Echizen et al.* teach authenticating an image signal. *Bruckstein et al.* and *Echizen et al.* do not teach correlating the media signal with the calibration signal to determine rotation of the media signal.

44. *Rhoads* teaches that image rotation is used in prevent flagging illicit use of watermarked material *(Rhoads, pg. 45 col. 8-16).* It would have been obvious to one having ordinary skill in the art at the time the invention was made to correlate the media signal with the calibration signal to determine rotation of the media signal and thus combat illegal use of the watermarked material.

45. **Claim 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bruckstein et al. (U.S. Patent No. 6757407)* in view of *Katzenbeisser et al.***

46. *Bruckstein et al.* do not teach authenticating audio and video signal.

Katzenbeisser et al. teach that driving force behind authenticating (digital watermarking) of audio and video signal is concern over unauthorized large-scale copying of audio and video *(Brucksein et al., Preface)*. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to direct *Bruckstein et al.'s* system towards audio and video signal in order to protect copyrights.

Appropriate correction is required.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Poltorak whose telephone number is (703) 305-0719. The examiner can normally be reached Monday through Thursday from 9:00 a.m. to 4:00 p.m. and alternate Fridays from 9:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (703) 308-4789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Signature

7/12/04

Date

Douglas J. Meislahn